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ABSTRACT

The Florida legislature has passed several reforms designed to shorten the time it takes students to obtain their degrees. Although the reforms have produced benefits, some articulation problems continue. The problems include the following: (1) One in five (20%) AA transfer students take a semester or more of lower division courses at a university; (2) Over half (51%) of the lower division courses taken by AA students were taken to meet degree requirements; and (3) These lower division courses cost students approximately \$8.7 million in tuition and cost the state \$13.8 million over a 3-year period. This study found that these six subjects account for almost half of the lower division courses taken: (1) math; (2) physics; (3) accounting; (4) economics; (5) foreign language; and (6) physical education. This report makes recommendations for increasing articulation efficiency. Some of those recommendations are as follows: (1) The division of colleges and universities should review university catalogs to ensure that the lower level prerequisites for all majors match those in Florida's Common Prerequisites; (2) The Articulation Coordinating Committee should monitor articulation outcomes; and (3) Community colleges should examine the local need for new baccalaureate programs. (NB)

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Articulation Works for Most Community College Transfer Students, But Some Problems Continue

at a glance

For Florida's "2 plus 2" system to work effectively, articulation between community colleges and state universities must be effective. Ideally, most students with an AA degree would need to take only an additional 60 credit hours to obtain their bachelor's degree from a state university.

The Legislature has passed several reforms to shorten the time it takes students to obtain their degrees. The "time to degree" reforms have produced several benefits, but some articulation problems continue. While most students have few or no articulation problems, the number of lower division courses taken by students after transferring to a university has not changed since 1997. In all, we found that several problems remain.

- One in five (20%) AA transfer students take a semester or more of lower division courses at a university.
- Over half of the lower division courses taken by AA transfer students (51%) were taken to meet degree requirements, indicating that some degree programs at some universities are likely not consistent with the *Common Prerequisites* requirements.
- Taking required lower division courses after transferring to a university cost students approximately \$8.7 million in tuition and the state \$13.8 million in support costs over a three-year period.

Purpose

This report is a part of our program evaluation and justification review of the State University System (SUS), Report No. 01-28, as required by s. 11.513, *Florida Statutes*. In our prior report, we found that students accumulated more credit hours than they needed for graduation. Poor articulation is one potential cause of students accumulating these excess hours.

As described below, Florida's articulation system has developed out of several initiatives. This report reviews one aspect of Florida's articulation system—the *Common Prerequisites* and the incidence of community college students taking lower division courses after transferring to a university. These courses are a potential problem because not only can they result in students accumulating excess hours but they can also limit students' options to take electives or earn a minor or second major and can result in additional costs to students and the state.

Background

Florida's postsecondary education system includes a "2 plus 2" articulation process through which students can earn a bachelor's degree with two years, or 60 credit hours at a community college and the remaining courses at a

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university.¹ Ideally, most community college students who transfer to a state university with an associate in arts degree would only need to take an additional 60 credit hours at a university to obtain their bachelor's degrees.

This requires effective coordination between Florida's community colleges and the state university system (SUS). Specifically, two conditions must be met. First, universities must accept community college courses for university credit. Second, articulation between community colleges and universities must be authentic. That is, the courses taken by students at the community college level must meet university prerequisites for each major as well as university general education requirements.

In 1995 the Legislature began a series of reforms designed to increase the coordination between community colleges and the state university system. For example, the Legislature required almost all degrees to consist of no more than 120 credit hours, of which at least half shall be achievable through courses designated as lower division.² Other legislative actions, however, focused on creating a more efficient articulation process so that AA transfer students could progress as quickly as students who began their post-secondary work at a university.

- The Legislature required community colleges and the SUS to use a common course numbering system so that all courses offered by universities and community colleges that have similar content would have the same course number.³ This makes it easier for universities to accept credit for classes taken at other institutions.
- The Legislature directed the Articulation Coordinating Committee (ACC) to study articulation issues and make recommendations to the State Board of Education, which was directed to establish an articulation accountability system.
- The Legislature required the ACC to recommend those courses identified to meet general education requirements for all public

community colleges and universities. All institutions must accept the general education courses when students transfer from another university or community college.

- The ACC adopted the *Common Prerequisites* manual in the fall of 1996.⁴ This manual lists the prerequisites for each major at each university offering the degree. It also lists prerequisites for each major at each university and identifies approved substitutions. All state universities and community colleges must use this list.⁵
- The ACC was required to identify courses designated as either general education or required for a degree, and to designate these courses as either upper or lower division. Community colleges may offer any course designated as a lower division course.
- The Legislature directed the Board of Regents and the State Board of Community Colleges to plan and develop a computer-assisted student advising system.⁶ The Florida Academic Counseling and Tracking for Students system (FACTS) is intended to improve the articulation process by providing students with online access to an articulated audit of their coursework. Based on a student's community college, intended university, and intended major, the articulated audit will review the courses students have taken and provide a list of remaining required courses. The articulated audits are expected to be available by 2003.
- The Florida Education Governance Reorganization Act of 2000 outlines the process for transitioning to a new educational governance model. The new governance system is designed to create a seamless education system from kindergarten through post-graduate school. Effective July 1, 2001, the Board of Regents and the State Board of Community Colleges were abolished. Their responsibilities were transferred to the newly created Florida Board of Education. Additionally, the ACC was transferred to the new board, which will set policy for community colleges, colleges, and universities as a whole. However, local boards of trustees appointed by the Governor will manage the

¹ Section 240.115(6), *F.S.*, provides that a baccalaureate degree shall require no more than 120 semester hours unless granted prior approval. This would be equivalent to 60 credit hours at a community college and 60 at a university.

² Sections 240.115(6), and 229.551(1)(f)3., *F.S.*

³ Section 229.551(1)(f), *F.S.*

⁴ The *Common Prerequisites* manual is updated on an annual basis.

⁵ Section 229.551(1)(f), *F.S.*

⁶ Section 240.2099, *F.S.*

day-to-day operations at individual institutions.

Findings

AA transfer students take an average of two lower division courses after transferring to a university

Articulation problems result in students taking lower division courses they could have completed while earning their associate of arts degrees. As a result, students and the state, both funding the cost of courses, lose money.

To assess the articulation system OPPACA sampled 10,986 students who earned their associate in arts (AA) degrees between 1997 and 1999. Of these, 6,485 transferred from community college to a state university and took undergraduate courses. We collected data on the students' major and every course they took from 1997 through the fall of 2000 (see Appendix A for additional details).

Over half (57%) of AA transfer students in our sample took lower division courses after transferring to a university. Overall, these students averaged two lower division courses and 5.6 credit hours after entering the SUS. We estimate that AA transfer students took approximately 96,000 lower division courses and 265,000 credit hours. Of these, approximately 48,000 courses and 134,000 credit hours were required courses.⁷ Over a three-year period these required courses cost Florida an estimated \$13.8 million (see Appendix A for details on calculations).⁸ In addition, since students pay 37% of the cost of their lower division courses,

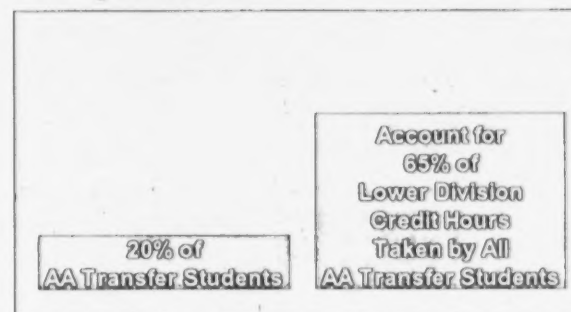
these courses cost students approximately \$8.7 million.⁹

One in five AA transfer students account for 65% of all lower division courses taken

Articulation problems, however, are generally confined to a small group of the AA transfer students. Many transfer students took no lower division courses, but 20% took at least a typical semester's worth (i.e., 11 or more credit hours).¹⁰ As Exhibit 1 shows, these students account for 65% of all lower division credit hours (and costs) taken by all transfer students. After completing their AA degrees and transferring to a university, these students took an average of 6.6 lower division courses totaling 18.6 credit hours.

Exhibit 1

20% of AA Transfer Students Accounted for 65% of All Lower Division Credit Hours Taken by AA Transfers



Source: OPPACA analysis of community college and university data.

Average lower division courses taken by transfer students has not declined since 1997

If the *Common Prerequisites* list has improved articulation, the number of lower division courses taken by transferring students would decline as an increasing percentage of students transfer under its guidance. However, it is difficult to fully assess the impact of the *Common*

⁷ Of the 6,485 students in our sample, only 3,212 had graduated when these data were collected. Transfer students take most lower division courses in their first few semesters and during their last semester. Since students still enrolled may continue to take lower division courses, our methodology should provide a reasonable estimate of the number and costs of lower division courses taken by transfer students.

⁸ Since some required lower division courses are planned to be completed within the student's last 60 hours, some lower division courses may not incur additional costs to the state or students. Based on available data we cannot readily identify which courses fall into this category. However, since 43% of the transfer students took no lower division courses, the number of majors requiring these courses is likely low.

⁹ State law limits tuition to less than 25% of the total cost of instruction. However, the costs for lower division courses are relatively low, but the fees remain constant. As a result the percentage paid by the student is higher. Overall, students pay approximately 24% of the total costs of instruction.

¹⁰ The average credit load for upper division students in the State University System was 11.1 credit hours in 1999.

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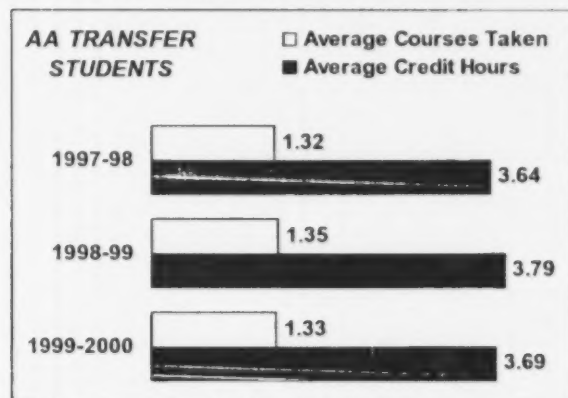
Prerequisites because part-time students will have had limited opportunities to use the *Common Prerequisites* because they take more time to complete their degrees.

Since the *Common Prerequisites* was implemented in 1996, students transferring in 1997 would have had little or no opportunity to use its guidance. Moreover, part-time students transferring in subsequent years would also have had limited opportunities to use the *Common Prerequisites* because they began their degrees before its implementation. More complete data will not be available to fully assess the benefits of the *Common Prerequisites* for several years.

However, in each successive year after 1997 (1998 and 1999) a growing proportion of transfer students would have been exposed to, and received guidance based on, the *Common Prerequisites*. Thus, even with available data, we would expect to see the number of lower division courses and credit hours taken after transferring decline between 1997 and 1999. Despite this, Exhibit 2 shows that the average number of courses taken by AA transfer students has not yet declined.

Exhibit 2

Transfer Students With AA Degrees Are Not Taking Fewer Lower Division Courses at Universities



Note: The differences are not statistically significant. They are what would be expected to occur randomly.

Source: OPPAGA analysis of community college and university data.

For example, students transferring from a community college to a university in 1997-98 averaged just over one lower division course, 3.64 credit hours, during their first three semesters at a university. By 1999-00, the number of credit hours had remained fairly constant with students averaging 3.69 credit hours during their first three semesters.

Articulation success varies across community colleges and universities

The percentage of AA transfer students taking lower division classes varied across both universities and community colleges. Exhibit 3 shows that articulation success varies across community colleges. Seventy-five percent of transfer students from Central Florida Community College took at least one lower division course after transferring to a university. By contrast, just 40% of students transferring from Daytona Beach Community College took lower division courses at the university level. Similarly, the percentage of students taking at least a full semester (11 credit hours) of lower division courses varies—from a high of 33% for Santa Fe Community College to 9% at Daytona Beach Community College.

Exhibit 4 shows that similar variations exist across universities. For example, at 41%, Florida Gulf Coast University had the lowest percentage of transfer students taking lower division courses. At the University of Florida, by contrast, 77% of AA transfer students took at least one lower division course. The ACC should consider the variation across community colleges and universities as it reviews the articulation problems facing students in Florida. Our review suggests three possible explanations for the variations shown in Exhibits 3 and 4.

Exhibit 3
Percentage of Students with AA Degrees
Taking Lower Division Courses Varies
by Community College

Community College	Percentage of AA Transfer Students Taking		Total Transfer Students
	At Least 1 Lower Division Course	At Least 11 Credit Hours of Lower Division Courses	
Central Florida	75%	31%	75
Tallahassee	74%	26%	415
Santa Fe	72%	33%	450
St. Johns River	67%	19%	84
Pasco-Hernando	65%	32%	97
Chipola Junior College	63%	27%	52
Hillsborough	61%	24%	391
Pensacola Junior College	61%	18%	204
Palm Beach	61%	23%	336
Valencia	60%	17%	616
Seminole	60%	14%	152
Okaloosa-Walton	58%	16%	139
Indian River	57%	20%	148
Edison	56%	17%	208
Florida	55%	17%	404
Lake Sumter	55%	11%	44
Miami-Dade	53%	18%	893
St. Petersburg Junior College	52%	16%	462
Brevard College	48%	17%	295
Manatee	48%	16%	161
Polk College	47%	21%	95
Gulf Coast	46%	20%	102
Broward	45%	14%	375
Daytona Beach	40%	9%	205
Total	57%	20%	6,485

Note: Florida Keys, Lake City, North Florida, and South Florida community colleges are not included because they did not have enough students in the sample to permit valid comparisons.
Source: OPPAGA analysis of Board of Regents data.

First, at least in the cases of the University of Florida and Florida State University, the number and variety of majors may increase the percentage of students who need lower division courses. For example, transfer students may find majors they had not previously considered before transferring to a university. With a wide range of potential majors, students are more likely to change their majors.

Exhibit 4
More Than One-Half of Transfer Students with
AA Degrees Took One or More Lower Division
Courses at a University Before Graduating

University	Percentage of AA Transfer Students Taking		Total Transfer Students
	At Least 1 Lower Division Course	A Semester of Lower Division Courses	
University of Florida	77%	34%	946
Florida State University	70%	23%	766
Florida A&M University	65%	25%	123
University of West Florida	55%	13%	308
University of South Florida	53%	19%	1,138
University of Central Florida	52%	15%	1,361
University of North Florida	50%	13%	452
Florida International University	50%	13%	849
Florida Atlantic University	42%	14%	633
Florida Gulf Coast University	41%	7%	153
Total	57%	19%	6,485¹

¹Total does not equal the sum of all transfer students. Some students enrolled in more than one university and are counted separately for each university. The State University System total counts all students once.

Source: OPPAGA analysis of Board of Regents data.

Changing majors leads to the accumulation of lower division courses because students must then take the prerequisites for the new major. While this will happen at all universities, the potential is greater at the universities with the widest range of majors. This could explain why Santa Fe and Tallahassee community colleges, which are in the home counties for the University of Florida and Florida State University, have some of the highest percentages of transfer students taking lower division courses.

Second, students may have difficulty gaining access to selected majors and courses. Some degree programs have limited enrollment and students who are initially denied access must either change majors or enroll at a later date. If they enroll later they may continue to accumulate lower division courses before entering their degree program. Similarly, students who cannot gain access to a particular course may decide to enroll in a lower division course instead.

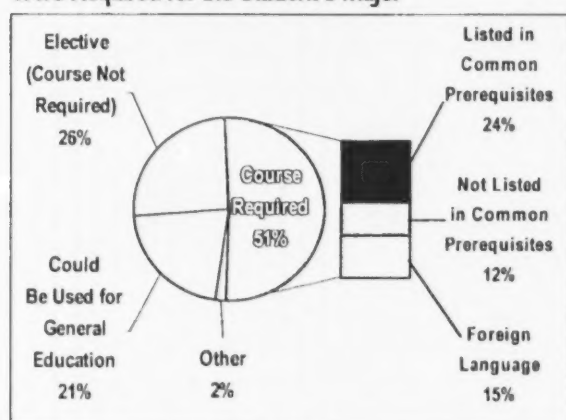
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Finally, geographic proximity may improve articulation for some universities and community colleges. Most community college students transfer to one or two universities close to their community college. This is likely to improve articulation between selected community colleges and universities since the students, faculty, and academic counselors will be familiar with each institution. However, Florida A&M, the University of Florida, and Florida State University draw transfer students statewide. This can lead to poorer articulation either because community colleges are not familiar with some universities or vice versa.

Most lower division courses taken by AA transfer students were required

As shown in Exhibit 5, 51% of the lower division courses taken by the AA transfer students in our sample were required to meet foreign language or degree of study (major) requirements. Another 21% of courses were not required to complete the degree, but could have been used to meet the university's general education requirements. However, since these students all had AA degrees, they should not have needed further general education courses. The remaining courses were not required to meet any graduation requirements and were likely electives.

Exhibit 5 Over Half of Lower Division Courses Were Required for the Student's Major



Other courses include those that were recommended for a major but not required and courses for which we could not find information. Source: OPPAGA analysis of Community College and State University System data.

The lower division courses taken by students after transferring to a university fell into six major categories as shown in Exhibit 5. The costs associated for each of these categories are presented in Exhibit 6.

Exhibit 6 Required Courses Cost Students Approximately \$8.7 Million and the State \$13.8 Million Over Three Years

Type of Course	Cost in Millions	
	to Students	to the State
Required Courses		
Listed in common prerequisites	\$ 4.1	\$ 6.5
Foreign language	2.6	4.1
Not listed in common prerequisites	2.0	3.2
Total for Required Courses	\$ 8.7	\$13.8
Non-Required Courses		
Electives	\$ 4.5	\$ 7.1
Could be used for general education	3.6	5.8
Other	0.3	0.5
Total for Non-Required Courses	\$ 8.4	\$13.4
Total	\$17.1	\$27.2

Source: OPPAGA analysis.

The first three categories include courses required for the student's major. Combined, these three categories cost students approximately \$8.7 million and the state \$13.8 million.

- First, almost one-quarter (24%) of the courses taken by transfer students were required by the student's major and listed in the *Common Prerequisites* document. If these students had decided on their future majors and universities by using the *Common Prerequisites*, then they should have been able to determine that they needed these courses before transferring. Thus, either the students and their advisors did not make full use of the *Common Prerequisites*, or the students selected different universities or majors and thus required different prerequisite courses.
- Second, foreign languages comprised 15% of lower-division courses taken by the transfer students. All university students must meet a foreign language requirement for admission.

The foreign language requirement can be met at the high school or community college levels. Transfer students who do not meet the foreign language requirement may still be admitted to the university but must complete the requirement before graduating from their baccalaureate program. Foreign languages represent over one of every seven lower division courses taken by transfer students at the university level. Clearly, students majoring in a foreign language may need to take these courses, but only 1 student (out of 300) in our sub-sample had a major in a foreign language. Establishing a state policy to require students to demonstrate that they meet the foreign language requirement to receive their AA degrees would reduce the number who must meet the requirement when transferring to a university.

- Third, 12% of the courses were required by the student's major but were not listed in the *Common Prerequisites*. These courses represent a relatively small fraction of all courses taken. However, they may represent an articulation problem because students using the *Common Prerequisites* will not receive complete information regarding all of the courses they are required to take. This is not a significant problem for students who are required to take the lower division courses, but do not exceed the number of credit hours needed for the degree.

The remaining courses fell into two large categories and a small number of other courses. Combined these cost students approximately \$8.4 million and the state \$13.4 million.

- Over one-fourth (26%) of the lower division courses taken by transfer students were apparently electives. The courses were not required by the student's major and did not meet general education requirements. It is possible that these courses helped students earn a minor. However, many of these courses probably do not fit that definition. For example, 43% of electives were some form of physical education (PE). While some prospective teachers plan to teach physical education, 98% of the lower division PE courses taken were not listed as requirements for the student's degree.

- General education requirements represent 21% of all courses. To receive an AA degree each transfer student must have completed the general education requirements. In addition, universities are required to accept those courses as fulfilling their own requirements. As a result, transfer students should not need to take any general education courses. Our review could not determine whether students were required to take these general education courses or took them as electives. The Florida Board of Education should review this issue to determine why AA transfer students take so many general education courses after transfer to a university.

Six subjects account for almost half of the lower division courses taken

We examined the subject areas for the lower division courses taken by transfer students. The students in our sample took a variety of different courses across a range of subjects. However, six subject areas—math, physics, accounting, economics, foreign language, and physical education, accounted for 44% of all lower division courses. Thus, understanding the reasons for taking lower division courses in general, and these in particular, is important for improving articulation.

Students have many reasons for taking lower division courses at a university

We identified several reasons why students may take lower division courses after completing their AA degrees.

First, the requirements for some majors at some universities do not match those approved in the *Common Prerequisites*. Of the lower division courses taken by students as a requirement for their major, over one-third (34%) were not listed in the *Common Prerequisites*. Some majors require lower division courses that are taken after transferring. This is not a significant problem if students can complete these courses within the total number of hours needed for the degree. However, some students may not be aware of these requirements until they transfer. As a result, these course requirements will either limit student options to take additional electives or, if they want to take a full complement of electives,

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cause them to take more hours than they need to graduate.

Second, since community college students cannot formally declare their major, students may not have the opportunity to tailor their community college academic courses to meet the requirements of their future major. As a result, they may end up taking additional courses required for their eventual major. This puts some community college transfer students at a disadvantage in their efforts to complete program requirements as timely as students who began their college career at a university. This also helps explain why so many (24%) of the courses taken by sampled students were listed in the *Common Prerequisites*. A student who has not decided on a major will not be able to make use of the *Common Prerequisites*.

Third, students may also change their intended major once they reach the university. A student who changes majors will often have to take additional lower division courses to meet the requirements of the new major.

Fourth, students may take additional courses in order to obtain a minor or otherwise improve their opportunities on the job market. Since most minors include a combination of upper and lower division courses within a field of study, seeking a minor could increase the number of lower division courses taken by a transfer student.

Fifth, students may delay taking some courses until they reach a university. Our review suggests three reasons students delay taking courses.

- Students may delay taking an introductory course for their major until they can take it at their intended university. For example, economics and accounting are introductory courses for business majors who may believe it advantageous to take all of their major-related courses at the university level.
- Some students may try to avoid particular classes that they perceive as difficult. For example, math and physics are likely to be considered difficult and students simply put off taking them until finally required to do so by their universities.
- Some students may prepare for difficult university courses such as statistics and calculus by taking lower level math courses at

the community college. For example, engineering students who need calculus may take algebra at the community college level and earn their AA degrees. But after transferring to a university, these students will still need to take a lower division calculus course.

Finally, students may simply take classes for non-academic purposes. In particular, many of the physical education courses, such as weight lifting, aerobics, and golf, are likely to have recreational or health purposes or produce skills useful for business or social contacts.

Recommendations

Improvements to increase articulation efficiency are still needed

We identified six actions the Legislature and the education system could take to increase efficient articulation and speed students' progression toward a degree.

1. **The division of colleges and universities should review university catalogs to ensure that the lower level prerequisites for all majors match those in the *Common Prerequisites*.** If the division of colleges and universities determines that a university's catalog does not comply with the *Common Prerequisites*, the university must either change its catalog or request and receive an exception from the Florida Board of Education. All approved exceptions will then be published in the *Common Prerequisites* manual. This is important because the *Common Prerequisites* is being used to create the FACTS system that will be used to help students plan their academic careers. If university prerequisites do not match those in the *Common Prerequisites* the articulated audits that students will receive through FACTS will not accurately determine the courses they need to take at their community colleges.
2. **The Articulation Coordinating Committee should monitor articulation outcomes.** This will require collecting information on the articulation practices of the universities and the resulting problems that transfer students encounter throughout Florida's public universities. The committee should require

each university's articulation officer to report on student transfer problems. The committee should then follow up with interviews of transfer students who have significant articulation problems. This would help the committee in its efforts to increase efficient articulation between community colleges and the state universities and target those students who accumulate the majority of lower division credit hours.

3. **The Florida Board of Education should consider strongly encouraging, or even requiring, community college students planning to enter the SUS to select a "track" toward their future major and university.** The track would indicate the student's intended major and university. This would help make articulation more seamless as students move from completing their AA degrees with a given track to working on their bachelor's degrees. It would also help ensure that the articulated audits produced by the FACTS system match the student's intended major and university.
4. **Community colleges should examine the local need for new baccalaureate programs.** Under the authority of the Florida Education Governance Reorganization Implementation act, community colleges may offer baccalaureate degrees designed to meet local workforce needs. By offering four-year degrees for selected majors, community colleges will reduce the articulation problems facing students who must transfer to a university.
5. **To reduce the number of general electives taken by transfer and other students, the Legislature should consider requiring students to pay 100% of the costs for courses that exceed 115% of the hours required for a degree.**¹¹ This would allow students to take some electives such as physical education without paying the surcharge, but those who make poor course decisions and accumulate excess credit hours would pay higher fees. It should be noted that this recommendation could limit the ability of students to earn a minor or double major or to change majors multiple times without facing financial penalties.

¹¹ See OPPAGA Report No. 01-28 for more information about excess hours at the state's universities.

6. **To reduce the number of foreign language courses taken at the universities will be difficult.** If the Legislature wants to reduce the number of foreign language courses taken by transfer and other students it has two basic options, each with its own advantages and disadvantages.

- **The Legislature could make foreign language a high school graduation requirement and ensure that it meets the current university requirement.** This would greatly reduce the number of students taking foreign language at the post-secondary level, but would expand the number of foreign language classes required in high schools. Moreover, it is not clear to what extent students not planning to pursue post-secondary work need to take foreign languages.
- **The Legislature could require students to meet the foreign language requirement as part of the AA degree.** This would shift some foreign language classes from the university to the community college level. However, it may require expanding the current general education requirements of the AA degree beyond the current 36 credit hours.

Agency Response

In accordance with the provisions of s. 11.45(7), *Florida Statutes*, a draft of our report was submitted to the Division of Colleges and Universities to review and respond. The interim chancellors' written response is printed herein on page 12.

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John W. Turcotte, OPPAGA Director

Appendix A

Technical Appendix

Sample Details

The population for the study is all AA community college students who transferred to a state university from 1997 to 1999.

The sample was drawn through the steps listed below.

1. The division of community colleges randomly selected 10,986 students from a population of 79,859 who earned their AA degrees between 1997 and 1999.
2. From the 10,986 graduates the Board of Regents matched 6,565 students who transferred to the SUS. The board provided a data file of every course taken by these students. Students with only graduate level courses were not included, resulting in 6,485 cases.
3. The Board of Regents matched 3,212 students who had earned baccalaureate degrees. The degree information was used to determine the students' majors.
4. From the sample of 3,212 transfer students receiving degrees from a public university, we randomly selected 300 students. We reviewed the course catalog for university and year of transfer whether each lower division course was a requirement for the student's major, listed in the *Common Prerequisites*, a general education requirement, or a foreign language.

Data coding

For each lower division course taken by the 300-student sub-sample we determined whether or not the course was

- listed in the *Common Prerequisites* for that student's major;
- listed in the university catalog as a requirement for the student's major but not listed in the *Common Prerequisites*;
- recommended for the student's major but not required;
- listed in the university catalog as a general education requirement;
- a foreign language; or
- none of the above—an elective.

Interpreting the coding

There are two points to keep in mind when reviewing the coding scheme.

1. Courses can fit into more than one category. For example, some courses for a major may also count towards the general education requirements. We coded a course as a general education requirement only if the course was not specifically required for the major and was not listed in the *Common Prerequisites*.
2. For general education courses, we cannot determine if the student used the course to meet the education requirement. It is possible for students to take these courses as electives.

Methodology for Population Estimates

To estimate the cost to students we used data from our sample on students who earned a baccalaureate degree. This methodology should provide a reasonable estimate because the students still enrolled are likely to continue taking lower division courses. We followed the steps outlined below.

1. We determined the mean number of lower division courses and credit hours taken by the sample of SUS students.
2. We multiplied the per credit hour cost for lower division courses in the SUS for each term by the percentage students taking lower division courses that term. When the results for each term are summed it provides the weighted cost per credit hour.
3. By multiplying the mean credit hours (step 1) by the costs per credit hour (step 2), we established the estimated costs of lower division hours per student.
4. Second, we estimated that 59% of AA students transferred to a state university by calculating the ratio between the sample of transfer students (10,986) and the SUS students (6,485). By multiplying the ratio in step 4 by the original population of 79,859, we estimated the number of transfers to a public university.
5. We multiplied the costs per student (step 3) by the number of estimated transfer students (step 4) to estimate the total costs to the state and to the student for all lower division courses.
6. Finally, we multiplied the results of step 5 by the percentage of courses coded as required—50.7%. This produced the total costs for just required lower division courses.

Appendix B



DIVISION OF COLLEGES & UNIVERSITIES Florida Board of Education

January 14, 2002

Mr. John W. Turcotte
Director
Office of Program Policy Analysis and Government Accountability
111 West Madison Street
Room 312
Claude Pepper Building
Tallahassee, Florida 32399-1475

Dear Mr. Turcotte:

We have reviewed the report of the Office of Program Policy Analysis and Government Accountability (OPPAGA) program review entitled "**Articulation Works for Most Community College Transfer Students, But Some Problems Continue**" and appreciate the opportunity to respond. We welcome the scrutiny of community college to university articulation provided by the OPPAGA report, and are gratified that articulation appears to be working successfully for most students. Following is the joint response of the Division of Community Colleges and the Division of Colleges and Universities to the OPPAGA report.

Summary

The OPPAGA review focused on the effectiveness of articulation in light of changes mandated by legislation in 1995, designed to reduce the "time to degree." The review found that Associate of Arts (AA) graduates entering the State University System between 1997-98 and 1999-2000 took an average of just over one lower level course during their first three semesters and an average of two lower level courses overall at state universities.

The Division of Colleges and Universities (DCU) and the Division of Community Colleges (DCC) believe that this extremely small average number of lower level courses taken by AA transfers speaks to the success of what is widely recognized outside of Florida as the most effective formal articulation agreement in the United States. No other state has in place all the tools of articulation available in Florida, which include formal statewide articulation agreements with guarantees, a statewide course numbering system, common calendar, and common prerequisites for all baccalaureate degrees. The OPPAGA report acknowledges that "...most students have little or no articulation problems."

325 West Gaines St.
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Individual state universities and community colleges, as well as the two divisions, have continued to work closely to institutionalize mechanisms designed to increase articulation and to resolve individual or systemic problems that may arise, and continue to seek means of improving articulation still further. We intend to follow up on some of the specific recommendations made in the OPPAGA study as outlined in the "Conclusion" of this response.

Statutory Background

In 1995, Senate Bill 2330, which eventually became law, proposed sweeping changes in Florida's baccalaureate degree programs, designed to decrease the time to degree completion. Some of the provisions were designed specifically to improve articulation between community colleges and state universities so that a student did not accumulate "extra" courses not required for the degree. Subsection 240.115(3), Florida Statutes, requires that by fall semester 1996, "With the exception of programs approved by the Board of Regents pursuant to s. 240.209(5)(f), degree program prerequisite courses shall be common across delivery systems and shall be identified by their common course code number consistent with the recommendations of the Articulation Coordinating Committee, pursuant to s. 229.551(1)(f)5." Such common prerequisites were established and went into effect with the freshmen classes entering state universities and community colleges in fall 1996. SB 2330 also limited the number of semester hours required for the baccalaureate degree. Subsection 240.115(6), Florida Statutes, states that "By fall semester of 1996, a baccalaureate degree program shall require no more than 120 semester hours of college credit, including 36 semester hours of general education coursework, unless prior approval has been granted by the Board of Regents."

OPPAGA Report

"At a Glance" and Background

As referenced in the OPPAGA report, the statute (s. 229.551, F.S.) requires that at least half the 120-hour baccalaureate be at the lower level. This generally constitutes the first 60 hours of a program, and is taken at the community college prior to transfer. However, some lower level courses are also a legitimate part of the last 60 hours of many programs. Therefore an average of 3.64 to 3.69 credit hours of lower level coursework in the first year at a university may not reflect an articulation problem.

In fact, the establishment of common prerequisite requirements themselves drove some lower level courses into the last 60 hours of the degree; i.e., if a program at a university found that one or more lower level courses were critical to its curriculum but were not required by other similar programs and therefore were not part of the common prerequisites, the university had little choice but to "make room" for those lower level courses within the last 60 hours.

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The Articulation Coordinating Committee accepted the Oversight Committee's recommendation that universities be permitted to require lower level courses which were not part of the common prerequisites, as long as they "fit" within the last 60 hours the student took after transfer and did not necessitate the student exceeding the specified hours for the degree (usually 120 hours) (*Common Prerequisites Manual for Catalog Year 2001-2002*, p. iii). In fact, if some of the lower level courses in question were an expected part of the last 60 hours of the degree, then the courses may not cause the student to exceed the required number of hours for the degree. In these cases there would be no additional cost attributable to taking these courses.

Findings

The OPPAGA review sampled 10,986 students who earned their AA degree between 1997 and 1999. Of these students, 6,485 transferred to a state university. The review found that, on the average, a community college AA transfer student took two lower level courses while at a state university. This is a remarkably low number of lower level courses and attests to the outstanding success of the Florida articulation system. This is particularly noteworthy when one considers the discussion in the previous section that some lower level courses are part of the requirements or electives built into the last 60 hours of many baccalaureate programs, and that 15% of the courses in question were foreign language courses which were probably taken to fulfill the admission requirement into the state universities.

As noted in the OPPAGA report, transfer students entering the state universities in 1997, 1998 and 1999 would have had limited opportunity to take advantage of the common prerequisites since the prerequisites did not go into effect until fall 1996 and the part-time nature of many community college students makes it likely that the majority of transfer students entering the universities in 1997, 1998 and 1999 had begun their studies at the community colleges prior to 1996. Data from community colleges suggest that of the students who obtain an AA degree, approximately one-third did so in two years, another one-third did so in four years, and the remaining one-third took longer than four years to obtain the AA degree. Therefore, it appears likely that by fall 1998, only one-third of the AA graduates entering the SUS who were included in the OPPAGA sample had come under the common prerequisite provisions. Even by fall 1999, less than two-thirds of the sample are likely to have entered the community college after the common prerequisites went into effect.

We should have better data to assess the success of the common prerequisites in improving articulation when we are able to examine the data for baccalaureate graduates in 2002 onward, since, by then, the students entering as freshmen on or after fall 1996 will compose a large portion of the AA transfers graduating with baccalaureate degrees. It is not how many lower level courses AA transfers took, but rather how many total courses they took after

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obtaining the AA degree, compared to earlier cohorts of AA transfers, which will provide a more accurate picture of improvement in articulation.

The OPPAGA review found that 24% of the lower level courses taken by AA transfers were listed in the common prerequisites; therefore students should have taken them prior to transfer. This is an issue that merits consideration. As OPPAGA acknowledges, it is possible that these courses were taken at the university because the students changed their minds about the major or did not seek advice on required courses or received inadequate counseling. An informal survey of community colleges indicated that they are indeed advising students about the common prerequisites. These prerequisites are also available to students on the Florida Academic and Counseling Tracking for Students (FACTS) system.

A significant portion (15%) of the lower level hours was for foreign language courses, which were most likely taken to fulfill the university admission requirement. The enrollment of students in these courses could be reduced if high school students considering going to college were encouraged to complete the foreign language requirement as part of their high school curriculum. However, since community colleges are open access, a large proportion of their students are adults who had not considered going to college while they were in high school. Therefore it appears likely that there will always be a portion of AA students who have not met the foreign language requirement prior to high school graduation.

The OPPAGA report enumerates several of the reasons why AA transfer students may take lower level courses at a university. We agree that many of these reasons, such as acquiring a minor or taking a lower level class that is not required in order to prepare for a more difficult required course, are likely to increase the number of lower division hours. However, these courses could better prepare students for the marketplace (in the case of a minor) or overcome poor preparation in high school and still enable students to take difficult courses in college, and therefore should not be discouraged.

Recommendations

1. The Division of Colleges and Universities should review university catalogs to ensure that the lower level prerequisites for all majors match those in the common prerequisites.

We agree that reviewing a sample of program curricula in university catalogs may be helpful to ensure compliance with common prerequisites. If non-compliance appears to be an issue, universities may be required to conduct more comprehensive reviews

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themselves and correct instances of noncompliance. In addition to common prerequisites, there are many programs which require lower level courses as part of the major. As long as these courses can be accommodated within the last 60 hours of the curriculum there is no problem of creating excess hours. We recommend that university catalogs clearly identify the common prerequisites, and also identify the lower level courses which are designed to fit within the last 60 hours but which may be taken at any time during the student's baccalaureate experience.

2. The Articulation Coordinating Committee (ACC) should monitor articulation outcomes.

Transfer problems are already brought to the attention of the ACC, the DCU and the DCC, and there is cooperation between the two divisions in resolving both individual and systemic articulation problems. Processes are already in place to hear from students and colleges regarding problems and to work through those problems. Numerous research studies carried out by both the community colleges and universities examine articulation and, when problems are uncovered, attempt to provide solutions. Most recently, much attention has been given to concurrent-use facilities. This model holds great promise and has evidenced early success. We continue to look for creative options, such as concurrent-use facilities, which can further improve the exemplary articulation which already occurs. In essence, the recommendation made in the report already occurs in numerous ways and the processes for monitoring articulation are already in place. We appreciate this recommendation from OPPAGA as it corroborates our efforts to ensure that important articulation mechanisms and functions, such as those accomplished by the ACC, are maintained during school code rewrite activities.

3. The Florida Board of Education should consider strongly encouraging, or even requiring, community college students planning to enter the SUS to select a "track" toward their future major and university.

Community colleges do informally identify a student's proposed major and advise the student accordingly. We believe it is not necessary to require that students be identified formally as a particular major in the first two years. Students do change majors during this time and changing formal tracks multiple times could lead to confusion. The informal system now in place identifies potential specializations and accomplishes a similar outcome without the pitfalls of formal tracking. The implementation of performance based budgeting motivated community colleges to identify and remove unnecessary barriers to completion. Through advising, community colleges will continue working to reduce the 24% of the lower level courses taken by transfer students at universities, which were listed in the common prerequisite manual. We believe that some of these courses are due to students changing their minds regarding a major. Greater

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awareness of majors and careers in high school could help students make wise choices regarding majors early in their college experience. Now that the common prerequisites are readily available on the FACTS on-line system, it should provide accurate prerequisite information for all students and help fulfill the goal that common prerequisites were intended to accomplish. Students and advisors at community colleges can also consult individual university catalogs so that students may choose to take, while still at the community college, lower level courses that are part of the last 60 hours. This would provide them opportunity to take more elective courses within the last 60 hours, as suggested in the OPPAGA report.

4. Community colleges should examine the local need for new baccalaureate programs.

We agree that community colleges, as well as universities, should continually assess local need for new programs. While a few community colleges have chosen to offer select baccalaureate degrees themselves, the more popular option, and in our opinion the most viable option for affecting larger numbers of students, is that of concurrent-use facilities. This model enhances Florida's 2+2 system, as community colleges and public and private universities voluntarily partner together to meet high demand baccalaureate and workforce needs by providing access to four-year degree programs either on community college campuses or at shared facilities. Over 13,000 students were enrolled in concurrent-use programs in 2000 and were provided with a seamless experience to continue their degree without changing campus locations. In a recent survey conducted by the Concurrent-Use Task Force, responding institutions identified the potential for 138 new or expanded partnerships (*Increasing Access to Baccalaureate Degrees through Concurrent-Use Programs, March 2001*).

5. To reduce the number of general electives taken by transfer students, the Legislature should consider requiring students to pay 100% of the costs for courses that exceed 115% of the hours required for a degree.

We do not believe that this is a helpful course of action. As the OPPAGA study itself points out, imposing 100% of the cost of courses on students would limit their ability to take a minor or double major. Institutions are concerned about excess hours and do have mechanisms to discourage egregious accumulation of a large number of excess hours. An accountability measure, which requires universities to report the percentage of students

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graduating within 115 % of degree requirements, already exists. Universities utilize the information to ensure that current students proceed efficiently through the baccalaureate degree. This mechanism enables universities to curtail unnecessary excess hours without penalizing students who have a legitimate reason for taking additional hours, such as those who wish to minor or double major in a second discipline.

6. To reduce the number of foreign language courses taken at the universities will be difficult. a) The Legislature could make foreign language a high school graduation requirement and ensure that it meets the current university requirement. b) The Legislature could require students to meet the foreign language requirement as part of the AA degree.

a) We believe that making foreign language a high school graduation requirement for all high school students may pose an unnecessary obstacle to many students who do not plan to go on to a baccalaureate program. We do believe it will be helpful to encourage high school students in the college preparatory track to take at least two years of a foreign language. In any event, such a requirement will only address the issue for a portion of the students enrolling in the community college, since the colleges draw a majority of their students from an adult pool of individuals who may not have considered college while they were in high school.

b) We believe that requiring students to have two years of a foreign language prior to receiving an AA degree could assist in decreasing the lower level hours transfer students take at the university level. However, such a policy could decrease the rate of AA graduates due to the imposition of additional credit hour requirements within a two-year versus a four-year time frame. We believe that, instead, students should be strongly encouraged to take foreign language before AA degree graduation. Any such policy should also be assessed for its impact on the Bright Futures Scholarship Program and the articulation rate of students into baccalaureate degree programs.

Conclusion

In conclusion, we believe that the findings of the OPPAGA report that a community college AA graduate takes only two lower division courses on the average after transfer to a state university demonstrate the remarkable success of articulation. This is particularly noteworthy since the count of two lower division courses includes courses taken to fulfill the foreign language admissions requirement and courses required as part of the major, which are accommodated within the last 60 hours of a baccalaureate program. In addition, as OPPAGA acknowledges, it will take more time to fully evaluate the impact of time to degree legislation, since many of the students affected by it would not have been captured in the cohorts selected for the study.

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Florida's articulation agreement is widely recognized as the most comprehensive and effective in the United States. The Florida system has an array of mechanisms to foster articulation including a common course numbering system, common prerequisites, a common calendar, guaranteed articulation of general education and the AA degree, and concurrent-use facilities. Individual institutions, as well as the DCU and the DCC, recognize the centrality of the 2+2 system, work together to address individual and systemic articulation problems as they arise, and conduct research on the effectiveness of articulation. We will continue to explore new avenues for improving articulation. Specifically, we agree with the report that the following steps will be helpful:

- The DCU will undertake a review of university catalogs to verify, for a sample of the most popular programs, that the requirements listed in the catalogs are in concert with the common prerequisites. If discrepancies are found, universities will be asked to make corrections.
- The DCC will contact the community colleges to ensure that all AA students are being appropriately advised regarding the common prerequisites.
- The DCU and DCC will follow up on the issue of the 20% of transfer students taking an average of one semester of lower level courses. We would appreciate access to the data utilized by OPPAGA in order to explore this issue and ensure consistency in the analysis.
- The DCU and the DCC will continue to work together to support efforts encouraging baccalaureate offerings on community college campuses through concurrent-use facilities.
- To reduce the number of foreign language courses taken by transfer students, we advocate strongly encouraging high school students not in the college preparatory track, but who may want to pursue postsecondary education, to take two years of a foreign language. We also support strong encouragement of AA degree student completion of foreign language requirements prior to graduation. Any changes to current policy, however, should be assessed on the intended and unintended impact on other state policies.

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The Division of Community Colleges, the Division of Colleges and Universities, and the individual institutions have worked hard to enhance articulation over the years and will continue to do so. The OPPAGA report will help focus our efforts for further improvements.

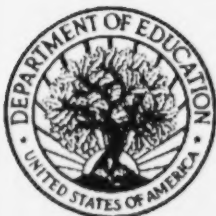
Sincerely,

/s/
Carl W. Blackwell
Interim Chancellor
Division of Colleges and Universities

/s/
J. David Armstrong
Interim Chancellor
Division of Community Colleges

CWB/gp

cc: Vice Chancellor R. E. LeMon, DCU
Executive Vice Chancellor Theresa Klebacha, DCC



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